AMENDMENTS TO THE CLAIMS

1-28. (Cancelled)

29. (Currently Amended) A marine geophysical acquisition system comprising ~~the following features~~:

one or more seismic signal sources ~~(2) for being~~ to be arranged in ~~the~~ a sea or at ~~the~~ a seafloor ~~and~~ for emitting seismic signals;

a plurality of seismic sensors ~~(1)~~ for sensing propagated seismic signals emitted from said one or more seismic signal sources, said seismic sensors being arranged on a receiver cable ~~(5) for being~~ to be extended in the sea~~, said seismic sensors (1) for sensing propagated seismic signals emitted from said signal source (2)~~;

~~wherein~~ one or more electromagnetic (EM) signal sources ~~(3)~~ arranged in the sea, or on the sea floor, ~~said signal source (3)~~ for emitting EM-signals, said one or more EM signal sources being provided with electrical power through an insulated electric cable connected to an electric signal generator aboard a marine vessel;

a plurality of electromagnetic ~~sensors (4)~~ sensor electrodes for sensing EM-signals propagated from said one or more EM-signal sources, said EM sensor electrodes being arranged along and on~~, or otherwise associated with,~~ said receiver cable ~~(5)~~, wherein said receiver cable includes a plurality of electronic units, each electronic unit including a voltage amplifier having a first voltage input line to be connected to a first one of said EM sensor electrodes and a second voltage input line to be connected to a second one of said EM sensor electrodes, ~~in which said electromagnetic sensors (4) have~~ said EM sensor electrodes being arranged at a generally fixed distance ~~relations with~~ relative to said seismic sensors ~~(1)~~ along said receiver cable ~~(5), said EM sensors (4) for sensing EM signals propagated from said EM signal sources (3)~~.

30. (Cancelled)

31. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said receiver cable ~~(5) having~~ includes a lead-in, umbilical or riser cable ~~(23)~~ extending from ~~said~~ the vessel ~~(30)~~.

32. (Currently Amended) The marine geophysical acquisition system of claim 31, wherein said receiver cable ~~(5) being~~ is arranged ~~with~~ so as to have a negative buoyancy for residing on the seafloor at least during data acquisition using said EM sensor electrodes ~~sensors (4), for avoiding attenuation in sea-water of EM-waves propagating upwards from underneath geological formations and reduce noise from physical movements, relative water flow close to the sensor and from waves propagating downwards from the air or from the sea surface trough the water masses~~.

33. (Currently Amended) The marine geophysical acquisition system of claim 29, ~~of which~~ wherein said one or more EM signal ~~source (3)~~ sources is positioned in ~~the~~ a same plane, or close to the same plane, as ~~the~~ a longitudinal axis of said receiver cable ~~(5)~~ with said plurality of electromagnetic ~~sensors (4)~~ sensor electrodes, said receiver cable ~~(5)~~ being generally linear in a vertical projection on ~~the~~ a horizontal plane.

34. (Currently Amended) The marine geophysical acquisition system of claim 33, ~~in which~~ wherein said one or more EM signal ~~source (3)~~ sources is bipolar, and ~~having~~ includes a bipolar axis ~~(3a)~~ in the same plane as said receiver cable ~~(5)~~.

35. (Cancelled)

36. (Currently Amended) The marine geophysical acquisition system of claim [[35]] 29, wherein said first voltage input line ~~(19a)~~ is connected to ~~an electrode (4_n)~~ said first one of said EM sensor electrodes, said voltage amplifier having an output connected to an analog-to-digital signal converter ~~(21_n), said voltage amplifier (19_n) for amplifying~~ and being operable to

amplify an alternating voltage difference between at least two of said EM sensor electrodes ~~(4n, 4x)~~.

37. (Currently Amended) The marine geophysical acquisition system of claim [[35]] 29, wherein said receiver cable is provided with a common ground line ~~(7)~~, ~~and~~ one or more of said EM sensor electrodes ~~(4_n)~~ being arranged ~~for being~~ to be connectable through a first switch ~~($18A_n$)~~ to said common ground line ~~(7), for forming~~ so as to form a reference ground voltage for one or more other EM sensor electrodes ~~(4)~~.

38. (Currently Amended) The marine geophysical acquisition system of claim [[36]] 37, wherein said ~~electrode (4_n)~~ one of said EM sensor electrodes is connectable via a second switch ~~($18C_n$)~~ to said second voltage input line ~~($19B_n$)~~ and is further ~~connected to~~ connectable through a third switch ~~($18B_n$)~~ to a local ground line ~~(8_n)~~ to a ~~similarly arranged~~ corresponding switch ~~($18B_{n+1}$)~~ on a nearest-neighbour electronic unit ~~(14_{n+1})~~, said corresponding switch being ~~($18B_{n+1}$)~~ further connected to a second voltage input line ~~($19B_{n+1}$)~~ of a voltage amplifier ~~(19_{n+1})~~ of said nearest-neighbour electronic unit ~~(14_{n+1})~~.

39. (Currently Amended) The marine geophysical acquisition system of claim 38, ~~adapted for measuring~~ wherein said one of said EM sensor electrodes and an EM sensor electrode of said nearest-neighbour electronic unit are arranged to measure one or more varying voltage signals in ~~the~~ an environment, ~~by using two consecutive electrodes (4_n, 4_{n+1}), by leaving~~ wherein said first switch ~~($18A_n$)~~ is open, ~~closing~~ said second switch ~~($18C_n$)~~ is closed, ~~closing~~ and said third switch ~~($18B_n$)~~ is closed so as to connect with said local ground line ~~(8_n)~~ to said corresponding switch ~~($18B_{n+1}$)~~ connected to said second voltage input line ~~(19b) on~~ of said voltage amplifier ~~(19_n)~~ on said ~~consecutive~~ nearest-neighbour electronic unit ~~(14_{n+1})~~.

40. (Currently Amended) The marine geophysical acquisition system of claim 38, ~~digitizing the~~ wherein said analog-to-digital signal converter is operable to digitize an amplified

varying voltage signal ~~($V21a_n$)~~ to a digitized voltage signal ~~($V21d_n$) using said analog-to-digital signal converter (21_n)~~ and ~~transmitting~~ transmit said digitized voltage signal ~~($V21d_n$)~~ along a main signal line ~~(6)~~ to a data storage means ~~(36) preferably~~ arranged on said vessel ~~(30),~~ for storage and analysis of said digitized voltage signal ~~($V21d_n$)~~.

41. (Currently Amended) The marine geophysical acquisition system of claim 39, ~~adapted for measuring one or more varying voltage signals in the environment by using~~ wherein an EM sensor electrode ~~(4_q) connected to an~~ of one of said electronic ~~unit (14_q) as~~ units comprises a common reference electrode for measuring a varying voltage signal in the environment, ~~by closing switch ($18A_q$) connecting~~ wherein a first switch of said one of said electronic units is closed so as to connect said common reference electrode ~~(4_q)~~ to said common ground line ~~(7)~~, ~~and closing switch ($18B_n$) connecting said~~ and wherein a second switch of another of said electronic units is closed so as to connect a second input line ~~($19b_n$) on~~ of an amplifier ~~(19_n)~~ of said another of said electronic units to said common ground line ~~(7), for using (14_q) as a reference electrode for measuring~~ so as to measure a varying signal ~~($V21a_n$)~~ on an EM sensor electrode ~~(4_n)~~ of said another of said electronic units.

42. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said receiver cable ~~(5) having~~ has a flexible, electrically insulating and water-proof outer skin ~~(25)~~.

43. (Currently Amended) The marine geophysical acquisition system of claim 42, wherein said receiver cable skin ~~(25) being~~ is generally continuous over generally ~~the~~ an entire length of said receiver cable ~~(5)~~, and ~~having~~ includes a cavity or a series of ~~preferably~~ fluid-containing cavities ~~(9)~~ containing said ~~EM~~ electronic units ~~(14)~~, said EM sensor electrodes ~~(4)~~ being arranged with one surface extending on ~~the~~ an outside of said skin ~~(25)~~ to be in direct electrical contact with the sea or the seafloor.

44. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said receiver cable ~~(5)~~ is made from two or more receiver cable sections ~~(15)~~.

45. (Currently Amended) The marine geophysical acquisition system of claim 44, wherein each of said receiver cable sections ~~(15) comprising~~ comprises both EM sensor electrodes ~~(4)~~ and seismic sensors ~~(1)~~.

46. (Currently Amended) The marine geophysical acquisition system of claim 44, wherein said receiver cable sections include EM receiver cable sections, ~~some of said receiver cable sections (15) being~~ said EM receiver cable sections ~~(15_{EM})~~ generally comprising EM sensor electrodes ~~(4)~~, each of said EM receiver cable ~~section (15_{EM})~~ sections being arranged in line ~~with,~~ with and between seismic receiver sections ~~(15_s)~~ generally comprising ~~generally~~ seismic sensors ~~(1)~~.

47. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said receiver cable ~~(5) comprising~~ comprises separate instrument unit cans ~~(10)~~ comprising seismic sensors ~~(1)~~ and EM sensor electrodes ~~(4)~~, said cans being connected by signal and voltage conducting cable sections ~~(15b)~~.

48. (Currently Amended) The marine geophysical acquisition system of claim 32, wherein said receiver cable ~~(5)~~ is arranged as a fixed array of sensors ~~(1, 4)~~ in a line or in a grid on the seafloor.

49. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said one or more seismic signal source ~~(2) being~~ is a seismic P- or S- wave vibrator source having a horizontal or vertical polarization ~~(2a)~~ arranged on the seafloor or in the seabed ~~seabeds, preferably a seismic vibrator (2a) of horizontal or vertical polarization~~.

50. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said seismic source ~~(2) being a pressure wave source (2b), preferably~~ is an airgun.

51. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said one or more electromagnetic signal source ~~(3) comprising~~ comprises two electric transmitter electrodes ~~(3a, 3b)~~ arranged ~~with a separation~~ so as to be separated in the sea ~~water~~, said transmitter electrodes ~~(3a, 3b)~~ being provided with a desired electric voltage and current signal through a pair of insulated electric cables ~~(26)~~ from ~~an~~ said electric signal generator ~~(24), preferably aboard said vessel (30)~~.

52. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said receiver cable ~~(5) comprising~~ comprises seismic electronic units ~~(16_n) comprising~~ including one or more seismic electronic amplifiers ~~(17_n)~~ for amplifying seismic sensor ~~(1)~~ output signals ~~($V17_n$)~~, and A/D converters ~~(22_{sn})~~ for digitizing ~~the~~ an amplified voltage signal ~~($V22_{sn}$)~~ from said seismic electronic amplifiers ~~(17)~~ to digitized seismic voltage signals ~~($S22_{sn}$),~~ and transmitting said digitized seismic voltage ~~signal ($S22_{sn}$)~~ signals along ~~said~~ a main signal line ~~(6)~~ to a data storage means ~~(36) preferably~~ arranged on said vessel ~~(30),~~ for storage and analysis of said digitized seismic voltage signals ~~($S22_{sn}$)~~.

53. (Currently Amended) The marine geophysical acquisition system of claim 29, wherein said one or more EM ~~source (3)~~ signal sources are arranged directly on the seafloor in order to prevent sea-water signal loss in ~~the~~ a downward propagating ~~EM~~ electromagnetic wave.

54. (Currently Amended) The marine geophysical acquisition system of claim 32, ~~said~~ wherein a data storage unit ~~(13)~~ is arranged with said receiver cable ~~(5)~~ on the seafloor~~, for being~~ to be retrieved by a vessel ~~(30)~~ after a traversal of said receiver cable ~~(5)~~ by said ~~electromagnetic transmitter (3)~~ one or more EM signal source and said one or more seismic signal source ~~(2)~~.

55. (Currently Amended) The marine geophysical acquisition system of claim 53, ~~said~~ wherein a data storage unit ~~(13)~~ is arranged remotely from said receiver cable ~~(5),~~ for online data retrieval during data acquisition while said ~~electromagnetic~~ one or more EM signal source ~~(3)~~ and said one or more seismic signal source ~~(2)~~ traverses said receiver cable ~~(5)~~.

56. (Cancelled)

57. (Currently Amended) The marine geophysical acquisition system of claim 39, ~~digitizing the~~ wherein said analog-to-digital signal converter is operable to digitize an amplified varying voltage signal ~~($V21a_n$)~~ to a digitized voltage signal ~~($V21d_n$) using said analog-to-digital signal converter (21_n)~~ and ~~transmitting~~ transmit said digitized voltage signal ~~($V21d_n$)~~ along a main signal line ~~(6)~~ to a data storage means ~~(36) preferably~~ arranged on said vessel ~~(30),~~ for storage and analysis of said digitized voltage signal ~~($V21d_n$)~~.